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ABSTRACT

This publication was developed to provide factual information and interpretive commentary on the National Assessment of Educational Progress in Reading, a federally funded survey of the educational attainments of representative samples of children and adults in the United States. It summarizes the context and results of the 1970-71 and 1974-75 national assessments in reading that indicate achievement gains for several population groups. Discussions of the implications for various persons at all levels of reading instruction written by experts in special areas of reading are included. The strengths and weaknesses of the two reading assessments are examined and suggestions are made for needed improvements for purposes of subsequent assessment. (MKM)

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NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS IN READING

Edited By
Robert J. Tierney
University of Arizona
and
Diane Lapp
Boston University

For the IRA Committee on
Interpretation and Analysis of
NAEP Reading Assessment

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CONTRIBUTORS

William E. Blanton
Appalachian State University

Carita Chapman
Chicago, Illinois, Board of Education

JoAnn Dauzat
Grambling State University

Marie C. DiBiasio
University of Rhode Island

Roger Farr
Indiana University

James Flood
Boston University

Gloria Frazier
National Assessment of Educational Progress

Kenneth S. Goodman
University of Arizona

David Hayes
El Dorado High School District
Placeville, California

Roselmina Indrisano
Boston University

Diane Lapp
Boston University

Jane L. McGrath
Scottsdale, Arizona, Community College

James P. Mahaffey
Anderson, South Carolina, Public Schools

Susan Oldefendt
National Assessment of Educational Progress

Wayne Otto
University of Wisconsin at Madison

Frank W. Rivas
National Assessment of Educational Progress

Robert B. Ruddell
University of California at Berkeley

Carol Sager
Wilmington, Massachusetts, Schools

Dixie Spiegel
University of North Carolina at Chapel Hill

Robert J. Tierney
University of Arizona

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Foreword

This publication illustrates many of the important contributions to a free society that reading and a reading association can make. In the United States, the work of the National Assessment of Educational Progress, particularly its assessment of reading, has been of high interest to citizens concerned with education. The findings are eagerly awaited and widely cited. The methods, assumptions, analyses, and interpretations are studied and discussed. This publication is devoted to the study and discussion of these topics.

Thus, at several levels, this publication shows reading as both the goal and the means. That the ability of children to read is a prized national goal is evident in both the creation of NAEP and in the widespread interest in its findings. The authorization, the interest, and the findings are all expressed in writing. Here, the meanings of the findings are discussed for all to read.

But the importance of reading and the functions of reading, as seen in this example, exist only under certain conditions. The citizens must be *able* to read. They must be *free* to read: What is printed and what is read must not be controlled by the state or by special interests; what is printed and what is read need not be favorable to the state or to established institutions. The citizens must know that the information they gain by reading may be freely used to improve their lives and to influence the shape of society.

That the International Reading Association is able to participate in a project under conditions close to these is reason for thanksgiving. And reason for zest. We should respond with eagerness to the knowledge that there *are* opportunities to teach people to read; that there *are* places where we can use our knowledge of reading, and reading itself, as tools in that work; that there *are* places where those who learn to read can use that achievement for personal growth and social betterment.

Walter H. MacGinitie, *President*
International Reading Association
1976-1977

Preface

In July 1976, President Walter H. MacGinitie of the International Reading Association appointed a committee to work with the project staff of National Assessment of Educational Progress (NAEP). The IRA Interpretation and Analysis of NAEP Reading Assessment Committee was charged with developing ways to disseminate to the members of the Association information about the NAEP reading assessments, including cautions, interpretations, and possible uses. This publication, addressed to the committee charge, was developed to:

1. Summarize the context and results of the 1970-71 and 1974-75 national assessments in reading of 9, 13, and 17 year olds.
2. Extract implications from these assessments for various persons at all levels of reading instruction.

The publication was not intended as an endorsement of the NAEP in Reading. Instead an attempt was made to provide an objective examination of the facts, concerns, and implications of the assessment. To this end, various contributions were solicited, reviewed, and compiled to form the volume.

Gloria Frazier, David Hayes, and Frank Rivas contributed to the introductory chapter, which provides the reader with information as to the scope, methodology, and goals of the NAEP project.

The second chapter, written by William Blanton, summarizes the results from the 1970-71 and 1974-75 NAEP in reading. Within this chapter, Blanton reviews the findings from the two assessments for 9 year olds, 13 year olds, and 17 year olds.

The third chapter provides the reader with assorted reactions to the data. Within this chapter two questions are addressed: To what extent are the NAEP results consistent with trends in reading achievement reported elsewhere? What are some of the implications for the educator and the public? The first question is responded to by William Blanton, who reviews and compares the present data with the data from similar assessments in reading abilities. The second question is responded to by various individuals representing adult education, bilingual education, community colleges, elementary education, parents, school reading directors, publishers, researchers, research and development centers, secondary education, state

coordinators, and teacher education. These contributors provide the reader with varied and specific commentary as to the implications of the NAEP data.

The final chapter, written by Kenneth Goodman and Robert Tierney, provides a cautionary backdrop for the publication's presentation of the findings and implications from the assessments. Important considerations for judging the legitimacy of the present and future assessments and their interpretations are suggested.

Finally, a list of pertinent publications and related material is provided for the reader interested in keeping abreast with NAEP project activities.

Introduction

The National Assessment of Educational Progress (NAEP) is a federally funded survey of the educational attainments of representative samples of American children and adults. It is a continuing national census-like survey of the cognitive, affective, and performance skills of 9 year olds, 13 year olds, 17 year olds, and 26-35 year olds. For example, according to reports issued by NAEP and its parent agency, the U.S. Office of Education, American schools are effectively teaching reading. Americans are not only learning to read, but in the early grades learning to read better than ever before. Whether these claims are justifiable is the subject of this monograph. Of particular concern is the question: What do the NAEP results really mean, given the limitations imposed by the enormity of the task and the apparent weaknesses in the data gathering procedure itself?

The present chapter is intended to provide some basic facts about the NAEP project and, in particular, the NAEP in Reading. The following questions and answers address the origin, purpose and procedures of the project.

Facts about the National Assessment of Educational Progress

What goals were set for NAEP?

The primary purpose of the National Assessment has been to provide information so that educational decision-makers could identify educational problem areas, establish educational priorities and determine national progress in education. It has been hoped that with this information and with information from other sources, conclusions could be drawn about the quality of education in the United States.

To aid in the process of gathering this information, the National Assessment established a number of goals to help give direction to the project. The goals suggested that NAEP should:

1. make available on a continuing basis comprehensive information on the educational achievement of young Americans;
2. measure change in the educational achievement of young Americans;
3. conduct special interest "probes" into selected areas of educational achievement;
4. provide data, analyses of the data and reports for a variety of audiences;
5. encourage and aid studies of National Assessment Information to generate implications useful for educational decision-makers and practitioners;
6. aid in the use of National Assessment technology at state and local levels where appropriate;
7. continue to develop the technologies necessary for gathering and analyzing National Assessment information; and
8. continue studies to improve National Assessment methods.

What were the origins of NAEP?

When the annual spending of public money for the education of young Americans began exceeding $30 billion in the early 1960s, taxpayers, educators, state legislatures, and the United States Congress began questioning the effectiveness of the increased funding. They knew

how much money was being spent on buildings, on teachers' salaries, on supplies, on curriculum planning, but they found that there was no available information about what or how much students were learning and that there was no way to compare the effectiveness of the spending from one year to the next. The only readily available indicators of the quality of education were such measures as student-teacher ratios and per-student expenditures—that is, there were measures of what went into education but little about what people actually learned. The typical standardized tests did not do what was needed; they provided scores that compared students with other students but did not provide figures for national educational quality.

In an attempt to find ways to supply such information, Frances Keppel, then the United States Commissioner of Education, and John Gardner, the President of the Carnegie Corporation, initiated a series of conferences to explore ways to help measure the quality of education. In 1964, the Carnegie Corporation of New York granted funds and appointed a group of concerned persons to examine the possibility of conducting assessment of educational achievement on a national basis. The group was named the Exploratory Committee on Assessing the Progress of Education (ECAPE). ECAPE decided that such an assessment was possible and that it would help provide information about the quality of education in America. The committee suggested conducting a periodic assessment of the knowledges, understandings, skills and attitudes in 10 learning areas: art, career and occupational development, citizenship, literature, mathematics, music, reading, science, social studies, and writing. The committee also suggested that the assessment be conducted at four age levels—9, 13, 17, and 26 through 35—which correspond to four key stages in the education of most individuals: the end of primary school, junior high school, high school and a few years past the end of formal schooling. To undertake this project, the Committee on Assessing the Progress of Education (CAPE) was formed and in the spring of 1969 began assessing the achievement of young Americans in science, citizenship and writing. Later that year, the assessment was adopted as a project by the Education Commission of the States (ECS). Funding and monitoring were transferred to the United States Office of Education, and the project was renamed the National Assessment of Educational Progress (NAEP). More recently, funding for NAEP has come from the National Center for Educational Statistics, Office of the Assistant Secretary for Education, Department of Health, Education, and Welfare, and the Ford Foundation for the Advancement of Education. The project presently shares the offices of the Education Commission of the States at 1860 Lincoln Street, Denver, Colorado 80295.

How often have curriculum areas been assessed?

Normally one or two curriculum areas have been assessed in one year. Areas of high public interest such as reading, mathematics, science, citizenship and writing have been assessed every four or five

years. Because of the complexity and high cost of a nationwide assessment, assessments in other areas such as social studies, art, literature, music and career and occupational development are planned every six or eight years.

How have the objectives within a curriculum area been established?

Because the purpose of NAEP has been to provide helpful information about education for the general public as well as for professional educators, procedures have been followed in constructing the assessment that have been not commonly employed in other test programs. The procedures have perhaps been most evident in the educational objectives that direct the assessment in each learning area. National Assessment compiled the objectives by working with teachers, scholars, educators and laymen from all over the country to discover educational goals that were thought to be generally acceptable throughout the nation. First, the objectives had to be considered important by scholars within a given learning area. Second, the objectives had to be considered desirable teaching goals in most schools. In addition, the objectives had to be considered acceptable by thoughtful lay citizens; that is, parents and others interested in education were to agree that an objective was important for youth of the country to meet. Ideally, NAEP hoped that truly national goals in education could be assessed. Realistically, in curriculum areas such as reading, it has been difficult to reach agreement either as to what should have been or could have been assessed.

How were the objectives for NAEP in reading established?

Across the two reading assessments, the NAEP staff and consultants have formulated, reformulated, and reformulated again various objectives to guide the development and interpretation of the assessment. Prior to the 1970-71 assessment, five objectives guided the development of assessment exercises.

1. Comprehend what is read:
   a. read individual words,
   b. read phrases, clauses, and sentences,
   c. read paragraphs, passages, and larger words.
2. Analyze what is read:
   a. be able to trace sequences,
   b. perceive the structure and organization of the work,
   c. see the techniques by which the author has created his effects.
3. Use what is read:
   a. remember significant parts of what is read,
   b. follow written directions,
   c. obtain information efficiently.
4. Reason logically from what is read:
   a. draw appropriate inferences from the material that is read and "read between the lines" where necessary,

b. arrive at a general principle after examining a series of details,
c. reason from a general principle to specific instances.

5. Make judgments concerning what is read:
a. relate what is read to other things,
b. make judgments using appropriate criteria,
c. make judgments using the work itself.

Once the reading exercises were developed, they were reorganized into "themes." It was suggested that themes were developed to cluster the reading exercises into reporting categories that were meaningful to lay persons, scholars, and educators. A theme was defined as a set of exercises that related to each other in content or in behaviors they required. The themes included: understanding words and word relationships, graphic materials, gleaning significant facts from passages, main ideas and organization, drawing inferences, and critical reading.

In 1974-75, the second assessment of reading was conducted using the exercises which were not released to the public from the previous assessment. Here, exercises were reformulated again using an ad-hoc classification of the items. Specifically, items were classified into three categories, literal comprehension, inferential comprehension, and reference skills.

Literal comprehension was defined as locating or remembering the exact meaning of a word, sentence, or paragraph. Items within this category required students 1) to recognize or identify a single fact, incident or idea presented; 2) to utilize the conventions of written language as aids to comprehension; and 3) to demonstrate flexibility in adapting their teaching to suit the purpose and the nature of the passage.

Inferential comprehension was defined as the reading skill of gleaning from a passage some idea that is not explicitly stated. Items in this category asked the reader to use the explicit information along with personal experiences and thinking abilities to make predictions, form generalizations, reach conclusions, make comparisons, form judgments and suggest new ideas.

Reference skills were defined as four basic study skills: reference skills, interpretational skills, locational skills, and organizational skills. They assessed the students' abilities to 1) find the correct resources for needed information; 2) find an answer in resource materials; 3) interpret the located information; and 4) efficiently organize the information for later use.

With the formulation, reformulation, and reformulation again of reading objectives, NAEP has provided a framework for interpretation, but a framework which may have been illegitimate. For example, NAEP admitted that categories may have been neither discrete nor comprehensive. If the categories were not discrete, then exercises may have been inaccurately categorized as representing a selected single skill. If the categories were not comprehensive, then items may have inadequately represented intended objectives.

What types of items were used in the NAEP in reading?

A variety of items were intended to reflect the objectives of the assessment and, for purposes of a comparative perspective, many of the same items were used across the two assessments. In reality, multiple-choice questions predominated and there were approximately 50 percent fewer items used in the 1974-75 assessment than the 1970-71 assessment. Items which were released for public examination following the 1970-71 assessment were excluded from the 1974-75 assessment.

To illustrate the type of items which were used, the following items taken from the 1974-75 assessment are included. From this examination the predominance of a multiple-choice format that included an "I don't know" response can be noted. The respondent merely filled in a square beside the response believed to be correct.

Literal Comprehension Examples

Literal comprehension was defined as locating or remembering the exact meaning of a word, sentence, or paragraph.

- *Read the story and answer the question.*

  My name is Gregory Gotrocks, and I live in Peoria, Illinois. I sell tractors. In June 1952, the Gotrocks Tractor Company (my dad happens to be the president) sent me to Nepal-Tibet to check on our sales office there.

  Business was slow and I had a lot of time to kill. I decided to see Mt. Everest so that I could tell everyone back in Peoria that I had seen it.

  It was beautiful. I was spellbound. I simply had to see what the view looked like from the top. So I started up the northwest slope. Everyone knows that this is the best route to take. It took me three long hours to reach the top, but the climb was well worth it.

  Why was Gregory Gotrocks sent to Nepal-Tibet?
  - ☐ To climb Mt. Everest
  - ☐ To get away from his father
  - ☐ To make his friend in Peoria jealous
  - ■ To check on his company's sales office
  - ☐ I don't know.

- *Read the passage and answer the questions.*

  How To Serve Meow-Wow Dinner

  One 8-ounce cup per average-sized cat is the recommended daily amount.

  Twice-a-day feeding is the general rule for most cats, so allow ½ cup for each meal.

  Remember that some cats just naturally like to nibble often instead of having a full meal at one time. In this case, serve each cat a cupful of Meow-Wow Dinner once a day, allowing the cat to eat as much and as often as desired.

  Until they reach three months old, feed kittens Meow-Wow Dinner wet about every four hours. Let them eat all they want.

  Sometimes cats lose their appetites and do not eat for a day or two. If lack of appetite continues, it may be wise to consult a veterinarian.

A. How should you feed a two-month-old kitten?
☐ Feed him only dry food
☐ Feed him one 8-ounce cup of food a day
☐ Feed him only once in the morning and once at night
■ Feed him wet food three or four different times a day
☐ I don't know.

B. If your cat doesn't finish his bowl of food one morning, what should you do?
☐ Call the veterinarian
☐ Take his bowl away until evening
■ Leave the food in the bowl for him
☐ Do not feed him until the next morning
☐ I don't know.

Literal Comprehension Examples

- *Read the passage and answer the questions.*

There is a myth, very popular these days, that the Court is divided into "liberal" and "conservative" wings, or, as some would put it, into "activists" and those who practice "judicial restraint." Labels of this kind are convenient but not accurate. Members of the Court, applying general constitutional provisions, understandably differ on occasion as to their meaning and application. This is inevitable in the interpretation of a document that is both brief and general by a human institution composed of strong-minded and independent members charged with a grave and difficult responsibility. But the inappropriateness of these labels becomes apparent upon even the most perfunctory analysis.

A. The author describes the Constitution as which of the following?
■ Brief
☐ Liberal
☐ Specific
☐ Perfunctory
☐ Inapplicable to legal cases
☐ I don't know.

B. Who are the people with a "difficult responsibility"?
■ The members of the Court
☐ Those who analyze the myth
☐ The writers of the document
☐ Those who believe in the myth
☐ Those who disagree with the myth
☐ I don't know.

C. In line 10, what does the word "their" refer to?
☐ Citizens
☐ Conservatives
☐ Liberals
☐ Members of the Court
■ Provisions
☐ I don't know.

Inferential Comprehension Examples

Inferential comprehension was defined as a higher level reading skill involving gleaning from a passage some idea that is not explicitly stated.

As we all know, the mentally retarded can only make baskets and other simple objects like...

Computer subassemblies.
Printed circuits for electronic test sets.
Electric meters.
Automobile instrument panels.
Aircraft components.
Hospital supplies.

You already know that the retarded worker is generally more conscientious, loyal and punctual than the average employee.
Perhaps you have a few "simple" jobs he might do in your business.

For information about employing the retarded, write The President's Committee on Mental Retardation, Washington, D.C. 20201.

The purpose of this advertisement is to

- ■ Encourage industry to employ mentally retarded people
- ☐ Show how mental retardation can be reduced in the population
- ☐ Indicate that mentally retarded workers are superior to other workers
- ☐ Show the general public that mentally retarded people can make simple things
- ☐ I don't know.

Inferential Comprehension Examples

- *Read the story and answer the question.*

In the past, flies were a lot bigger than they are now. My father used to throw rocks at them. My grandfather used to shoot them with a gun. And my greatgrandfather told me it used to take five men, a dog, two horses, and sixteen cats to drag a fly out of the kitchen.

Which sentence below tells you what the author wants you to do when you read this story?

☐ He wants you to kill flies
☐ He wants you to buy a pet
■ He wants you to think it is funny
☐ He wants you to feel sorry for flies
☐ I don't know.

Reference Skill Examples

Reference skills were defined as four basic skills: reference skills, interpretational skills, locational skills, and organizational skills.

This is a directory from a newspaper. Look at it and answer the questions.

	Page		*Page*
Astrology	18	Local News	15-17
Bridge	18	Movies	21
Classified	33-40	Obituaries	32
Comics	20	Radio	22
Crossword	18	Sports	25-28
Editorial	47	Television	22
Financial	29-31	Weather	12
Letters to the Editor	17	Women	41-43

A. On what page would you look for today's television schedule?
B. If you wanted to check the weather forecast, on what page would you look?
C. Where would you look to check on the stock averages for the day?
D. On what pages would you probably find beauty hints?
E. Does the newspaper give information about playing bridge?

■ Yes
☐ No
☐ Cannot tell from the information given
☐ I don't know.

Where is the BEST place to find out about the Declaration of Independence?

☐ An atlas
☐ A comic book
☐ A dictionary
■ An encyclopedia
☐ A newspaper
☐ I don't know.

How were items administered?

The assessment items were administered to individuals or to groups of 12 or fewer by trained personnel. For example, some items were administered individually to afford respondents an opportunity to express themselves independently and orally. In group administrations of items, instructions and sometimes the items themselves were presented to the respondents through taped recordings.

National Assessment items were administered in such a way that no one individual took all the items (this would have required one person to spend as long as 14 hours to complete the entire set of exercises). Instead, each examinee responded to only a portion of the exercises. Approximately 2,500 respondents completed each exercise and these respondents have remained anonymous.

Who have been assessed?

To measure the nation's educational achievement, the National Assessment has presented a specific task to a group of people and from the results estimated the percentage of people across the nation who could answer a question or perform a task. The exercises have been administered to scientifically selected samples that took into account community and socioeconomic status. The samples have been selected so that generalizations can be made about the national population and about the groups that the individuals represented.

Usually four age levels have been sampled—9 year olds, 13 year olds, 17 year olds, and young adults between the ages of 26 and 35. Using a stratified probability sampling procedure similar to those used in public opinion polling, NAEP selected people for the assessment and then sought their cooperation. In all, approximately 75,000 to 85,000 respondents have participated each year.

How have the results been reported?

The results of the NAEP in reading have been reported nationally, by item categories and age. For example, the percentage of all 9 year olds who responded correctly to literal comprehension items was reported. Results have been reported for other categories as well.

REGION In order to present regional results, the country was divided into four regions—Southeast, West, Central, and Northeast. The map shows the states included in each region.

SEX AND RACE Results were reported for males and females, blacks and whites.

PARENTAL EDUCATION Four categories of parental education were defined by National Assessment: 1) parents with no high school education, 2) at least one parent with some high school education, 3) at least one parent a high school graduate, and 4) at least one parent with some post-high school education.

COMMUNITY TYPE Community types were identified both by the size of the community and by the type of employment of the majority of the community residents.

1. *High socioeconomic.* Areas in or around cities with a population greater than 200,000 where a high proportion of the residents were in professional or managerial positions.

2. *Low socioeconomic.* Areas in or around cities with a population greater than 200,000 where a high proportion of the residents were on welfare or were not regularly employed.

3. *Rural.* Areas with a population of under 10,000 where most of the residents were farmers or farm workers.

4. *Urban fringe.* Communities outside the city limits of a city with a population greater than 200,000 and not in the high or low socioeconomic groups.

5. *Main big city.* Communities within the city limits of a city with a population over 200,000 and not included in the high or low socioeconomic groups.

6. *Medium city.* Cities with populations between 25,000 and 200,000.

7. *Small places.* Communities with a population of less than 25,000 and not in the rural group.

Findings of the NAEP in Reading

On September 21, 1976, the Education Commission of the States issued a news release entitled "It's a Fact—Johnny, Age 9, is Reading Better." The nationwide surveys by NAEP in 1970-71 and 1974-75 were represented, compared, and discussed in a report entitled *Reading in America: A Perspective on Two Assessments.*

The present chapter describes the results of these NAEP reading assessments. Specifically, it presents the results by age levels and demographic variables. The other chapters are intended to put these NAEP data in perspective. In other words, as one reads the results of these data, one should not be presumptuous and generate inferences and explanations beyond the framework for interpretation afforded by the discussion which precedes and follows this chapter.

The 1970-71 and 1974-75 Assessments

Results for Nine Year Olds

OVERALL RESULTS In order to make comparisons of 9 year olds, national probability samples of 22,500* 9 year olds were administered the National Assessment reading surveys during 1971 and 1975. The total reading survey was comprised of three subtests: literal comprehension (19 items), inferential comprehension (27 items), and reference skills (8 items).

The results of the overall test are presented in Table 1. As can be seen, the average percentage of 9 year olds who were able to answer test items correctly increased by 1.2 percentage points between 1971 and 1975. This finding suggests that approximately 50,000 more 9 year old children could respond correctly to a test item in 1975 than in 1971. Other findings are interesting to note:

1. The performance of children from the Southeast increased significantly (2.8 percentage points) between 1971 and 1975. With this

*National probability sample of 22,500: For every increase or decrease of 1 percentage point, approximately 50,000 more students in the national population of that age are probably able or unable to respond correctly to a typical test item.

Table I
Mean Percentages and Standard Errors of Differences
For 9-, 13- and 17-Year-Old Students on All Reading
Items for NAEP Reading Assessments
(1970-71, 1974-75)

	9-Year-Olds Mean Percentages		SE	13-Year-Olds Mean Percentages		SE	17-Year-Olds Mean Percentages		SE
	1970-71	1974-75		1970-71	1974-75		1970-71	1974-75	
Nation	63.979	65.195*	.545	60.602	60.737	.592	72.119	72.003	.522
Region									
Southeast	58.996	61.824*	1.338	55.447	57.101	1.165	67.000	67.889	1.203
West	63.347	64.063	1.099	59.936	59.817	.927	71.465	70.999	1.060
Central	66.608	67.493	1.020	63.159	63.431	1.129	74.398	74.414	.746
Northeast	65.781	66.815	.936	63.175	62.121	1.353	74.023	73.482	1.146
Sex									
Male	61.650	63.087*	.610	58.003	58.108	.678	70.270	70.133	.594
Female	66.281	67.300	.555	63.208	63.359	.622	73.877	73.777	.569
Race									
Black	49.698	54.514*	1.179	45.550	46.386	1.052	55.208	55.434	1.271
White	66.438	67.665*	.509	63.273	63.534	.530	74.380	74.797	.417
Parent Education									
No. H.S.	54.873	57.239*	1.120	49.000	49.452	1.115	60.838	61.734	1.231
Some H.S.	59.044	58.907	1.134	55.492	54.797	.850	65.917	65.135	.778
Grad H.S.	64.689	66.078*	.584	61.173	60.160	.574	71.524	70.815	.611
Post H.S.	70.082	69.545	.630	67.321	67.305	.579	77.781	77.081	.469

Community Type									
Lo Metro	52.756	55.225	1.827	51.012	48.893	1.754	63.914	62.824	1.941
Extreme Rural	60.887	62.989	1.826	56.742	56.788	1.732	69.080	70.296	1.905
Small Places	63.440	65.765*	.864	60.006	61.452	.880	72.353	72.657	.832
Medium City	63.959	65.533	1.421	60.022	59.571	1.465	72.982	71.948	1.153
Main Big City	65.097	62.878	1.414	62.161	60.073	1.607	72.215	71.940	1.352
Urban Fringe	66.489	67.344	1.260	62.588	63.067	1.383	73.364	74.208	.971
Hi Metro	71.566	71.184	.933	68.341	68.656	1.210	78.865	78.711	.857

The mean percentage for a set of items is the average percentage of students who responded correctly to the items.

The standard error (SE) of the difference between a 1970-71 mean percentage and a 1974-75 mean percentage was computed by taking the square root of the sum of the squared 1970-71 standard error of the mean and the squared 1974-75 standard error of the mean.

Within each age the set of items across which results were obtained was the same in 1970-71 and 1974-75. Some items were administered to all three ages, some to two ages and some to only one age. Therefore, the mean percentages were computed on somewhat different sets of items for each of the ages and direct comparisons of mean percentages between ages are not possible with these data.

* Indicates that the difference in mean percentages between the two assessments was at least two standard errors in magnitude. The probability that a difference this large would have occurred by chance is .05 or less.

increase, the Southeast remains only 3 percentage points below the national average. No significant changes were obtained for the West, Central, and Northeast regions.

2. The average percentage of black 9 year olds answering items correctly increased by 4.8 percentage points. The average reading performance of their white counterparts, on the other hand, increased by only 1.2 percentage points. However, black children are still performing 13 percentage points below white children in overall reading performance.

3. Females are still performing better than males. There was an increase of 1.4 percentage points for males while the overall performance of females increased by 1 percentage point.

4. No significant changes were found for 9 year olds whose parents attended high school, but did not graduate, or whose parents continued their education after high school. In contrast, the overall performance of children whose parents had not attended high school increased 2.4 percentage points, along with a 1.4 percentage point increase for children whose parents graduated from high school.

5. The overall achievement level for children attending school in small places (population less than 25,000) increased significantly (2.3 percentage points) between 1971 and 1975. However, the achievement of children from other types of communities remained about the same.

LITERAL COMPREHENSION As mentioned earlier, 19 of the survey items measured performance on literal comprehension items. Literal comprehension was defined as the ability to locate or remember the exact meaning of a word, sentence, or paragraph.

The results of performance of 9 year olds for the 1971 and 1975 assessments are presented in Table II. The measurement of the performance of 9 year olds at the *national* level showed no significant changes on items dealing with literal comprehension skills. However, comparisons between the 1971-1975 data reveal the following:

1. The performance of Southeastern 9 year olds increased by 3.4 percentage points.

2. The level of achievement for black students increased by 4.8 percentage points.

3. The performance level of 9 year olds whose parents had graduated from high school increased by 2 percentage points.

INFERENTIAL COMPREHENSION Twenty-seven items measured performance on inferential comprehension tasks. These tasks required readers to use information obtained by reading a passage together with their background of experiences and ability to make predictions, form generalizations, reach conclusions, make comparisons, and form judgments or create new ideas.

Again, as with literal comprehension, there was no significant change in the performance of 9 year olds at the *national* level on inferential comprehension skills. However, between 1971 and 1974 assessments, the following data were obtained:

1. The percentage of black students answering items correctly increased by 3.7 percentage points, although their white counterparts were still performing almost 14 percentage points higher.

2. The average achievement level of children whose parents had no high school education increased 3 percentage points.

3. The average performance of 9 year olds from towns with a population less than 25,000 increased 2.1 percentage points.

REFERENCE SKILLS The remaining test items measured reference skills. Reference skills were defined by National Assessment as: 1) knowing the correct resource for needed information and 2) finding an answer in that resource.

On the national level, performance of 9 year old students increased by 2.2 percentage points. In addition to this finding, between 1971 and 1975

1. The achievement level of children from the Northeast increased by 2.9 percentage points.

2. The performance level of 9 year old males increased by 2.1 percentage points, and the performance of their female peers increased by 2.3 percentage points.

3. The percentage of black children answering items correctly increased by 7 percentage points, while the increase for white children answering items correctly increased 2.2 percentage points.

4. There was an increase of 3.6 percentage points for children attending schools in towns with populations of less than 25,000.

Results for Thirteen Year Olds

OVERALL RESULTS As with the assessment of 9 year olds, national probability samples of about 22,500 students were selected for each of the assessments in 1971 and 1975. The total reading survey for the two assessments comprised 85 items: literal comprehension (52 items), inferential comprehension (24 items) and reference skills (9 items).

The overall results for the 13 year old age group are presented in Table 1. In general, when the 1971 and 1975 results are compared, it appears that there has been very little change in the reading ability of 13 year olds during the four year period between assessments. In looking at both the 1971 and 1975 results, however, a number of findings are clear:

1. Females still outperform males by 5 percentage points.

2. The achievement level of 13 year old blacks remains about 17 percentage points below the performance of their white peer group.

3. The performance of children from the Central region is 3 percentage points above the national level, while the performance of children from the Southeast region is approximately 4 percentage points below the national level. In addition, the performance levels of students from the West and Northeast about equal the national level of performance.

Table II
Mean Percentages and Standard Errors of Differences
For 9-Year-Old Students on Literal Comprehension,
Inferential Comprehension and Reference Skills
Items for NAEP Reading Assessments
(1970-71, 1974-75)

	Literal Comprehension Mean Percentages		SE	Inferential Comprehension Mean Percentages		SE	Reference Skills Mean Percentages		SE
	1970-71	1974-75		1970-71	1974-75		1970-71	1974-75	
Nation	65.745	66.780	.620	60.476	61.370	.615	64.784	67.003*	.708
Region									
Southeast	60.347	63.784*	1.568	55.746	57.654	1.358	60.906	64.101	1.813
West	65.364	65.295	1.239	59.734	60.800	1.166	63.537	64.993	1.482
Central	68.326	68.932	1.007	62.965	63.570	1.207	67.952	69.896	1.259
Northeast	67.687	68.567	1.181	62.379	62.856	1.145	65.501	68.429*	1.339
Sex									
Male	63.319	64.459	.680	58.270	59.593	.704	62.209	64.350*	.885
Female	68.142	69.120	.695	62.653	63.141	.636	67.362	69.619*	.885
Race									
Black	51.527	56.287*	1.435	46.866	50.529*	1.361	49.443	56.470*	1.494
White	68.196	69.189	.569	62.869	63.850	.612	67.356	69.532*	.743

Parent Education									
No H.S.	57.451	58.526	1.628	50.946	53.976*	1.420	54.901	57.782	2.252
Some H.S.	61.066	60.616	1.529	56.141	55.254	1.501	57.706	61.014	2.488
Grad H.S.	65.749	67.757	.862	61.373	62.374	.708	66.633	67.281	.923
Post H.S.	71.668	70.737	.729	66.526	65.801	.742	71.632	72.359	.980
Community Type									
Lo Metro	54.325	58.118	1.974	49.583	50.924	2.265	52.458	55.553	3.067
Extreme Rural	62.067	64.210	2.313	57.682	59.358	2.107	60.871	64.690	2.952
Small Places	65.474	67.117	1.039	59.997	62.109*	.941	63.855	67.447*	1.335
Medium City	66.046	67.402	1.608	60.165	61.561	1.778	66.492	67.359	2.067
Main Big City	67.098	64.428	2.007	61.917	58.870	1.621	64.041	65.265	2.335
Urban Fringe	68.698	69.329	1.402	62.487	63.111	1.816	67.627	69.697	1.645
Hi Metro	72.517	72.267	1.323	68.396	67.690	1.394	72.534	73.508	2.167

The mean percentage for a set of items is the average percentage of students who responded correctly to the items.

The standard error (SE) of the difference between a 1970-71 mean percentage and a 1974-75 mean percentage was computed by taking the square root of the sum of the squared 1970-71 standard error of the mean and the squared 1974-75 standard error of the mean.

* Indicates that the difference in mean percentages between the two assessments was at least two standard errors in magnitude. The probability that a difference this large would have occurred by chance is .05 or less.

4. The achievement level for children from low metropolitan areas is approximately 12 percentage points below the national level. In contrast, the achievement level of children from high metropolitan areas remains about 8 percentage points above the national level.

LITERAL COMPREHENSION Table III presents the results for 13 year old literal comprehension, inferential comprehension and reference skills. Unlike the results for the younger group, significant increases were observed for only two groups of 13 year olds. Performance in the Southeast region increased by 2.7 percentage points. Similarly, performance of children from small places increased by 2.6 percentage points.

INFERENTIAL COMPREHENSION As can be seen in Table III, performance on inferential comprehension items did not increase. In fact, although the decreases are not significant, the performance of almost every 13 year old group decreased slightly between the two assessments.

REFERENCE SKILLS The results of performance on reference skills items are similar to those of performance on inferential comprehension items. At the national level, there was a decrease of 1.8 percentage points between assessments. In addition, the performance of all 13 year old groups except the urban fringe group declined between 1971 and 1975. The following declines in achievement were of particular interest:

1. The performance of females decreased by 2.4 percentage points, but their performance was still 3 percentage points above the performance level of males.

2. The achievement level of children whose parents had attended high school but did not graduate dropped 6.7 percentage points.

3. A decline of 2.4 percentage points was observed in the achievement of pupils whose parents had graduated from high school.

4. The average performance of students living in medium cities decreased by 4.7 percentage points.

Results for Seventeen Year Olds

OVERALL RESULTS As with the earlier age groups, national probability samples of 22,500 were drawn during 1971 and 1975 to make comparisons of reading survey data for 17 year olds. The reading survey represented 85 items: literal comprehension (49 items), inferential comprehension (25 items) and reference skills (11 items).

Reviewing the overall results presented in Table I, it can be seen that there are no significant increases or decreases in achievement between the 1971 and 1975 assessments. However, a number of important findings are clear when the results of both surveys are examined:

1. The Southeast region is 4 percentage points below the national level of achievement and the West is 1 percentage point below the national level, while the Northeast and Central regions are 2 percentage points above the national level of achievement.

2. The performance level of females continues to be about 3.6 percentage points above that of their male counterparts.

3. The gap between the achievement level of black and white students is 19 percentage points, favoring white students.

4. The performance of pupils from low metropolitan areas remains 9 percentage points below the national average. In contrast, the performance of pupils from high metropolitan areas continue to be approximately 7 percentage points above the national level.

LITERAL COMPREHENSION Table IV contains the results of 17 year olds' performance on literal comprehension, inferential comprehension, and reference skills items. It should be noted that, with one exception, the achievement level of all the groups on the literal comprehension items remained the same. Students from small places recorded an increase of 1.7 percentage points on these items.

INFERENTIAL COMPREHENSION In looking at the results for inferential comprehension, it can be determined that there was a decline in performance at the national level between 1971 and 1975, along with decreases for other groups. For example, the performance of females fell 1.6 percentage points. Similarly, the achievement of 17 year olds whose parents were educated beyond high school declined by 1.9 percentage points.

REFERENCE SKILLS Table IV reveals that no significant changes occurred in performance of reference skill items between 1971 and 1975. In both assessments, however, it is possible to determine that:

1. The Southeast and West regions are 6 and 1 percentage points, respectively, below the national average, while Northeast and Central region students remain 2 to 3 percentage points above the national average.

2. The performance of black students is a glaring 26 percentage points below the performance of white students.

3. The achievement level of students whose parents did not attend high school continues to be approximately 15 percentage points below the national achievement level.

4. The performance of students from low-metropolitan areas continues to be about 11 percentage points below the national average, and performance of students from high-metropolitan areas continues to be approximately 9 percentage points above the national average.

Table III
Mean Percentages and Standard Errors of Differences
For 13-Year-Old Students on Literal Comprehension,
Inferential Comprehension and Reference Skill
Items for NAEP Reading Assessments
(1970-71, 1974-75)*

	Literal Comprehension Mean Percentages		SE	Inferential Comprehension Mean Percentages		SE	Reference Skills Mean Percentages		SE
	1970-71	1974-75		1970-71	1974-75		1970-71	1974-75	
Nation	61.817	62.722	.676	56.065	55.279	.566	65.678	63.831	.847
Region									
Southwest	56.081	58.755*	1.315	52.435	52.767	1.170	59.819	59.098	1.667
West	61.010	62.001	1.092	55.478	54.075	.845	65.622	62.508	1.559
Central	64.485	65.613	1.232	58.032	57.451	1.203	69.174	66.770	1.386
Northeast	64.941	64.010	1.585	57.846	56.449	1.174	67.188	66.331	1.974
Sex									
Male	58.849	59.714	.761	53.987	53.033	.686	63.820	62.365	1.126
Female	64.776	65.717	.713	58.145	57.524	.629	67.647	65.297*	.902
Race									
Black	46.241	47.700	1.212	43.222	43.870	1.127	47.764	45.508	1.913
White	64.598	65.657	.616	58.372	57.560	.549	68.692	67.196	.759
Parent Education									
No H.S.	49.786	50.427	1.265	46.159	46.625	1.320	52.031	51.364	2.584
Some H.S.	55.827	56.833	1.032	52.416	50.286	1.164	61.749	55.064*	1.660
Grad H.S.	62.741	62.107	.661	55.803	54.503	.684	66.432	63.991*	.947
Post H.S.	68.671	69.558	.675	62.460	60.949*	.680	72.486	71.228	.805

Community Type									
Lo Metro	53.227	50.619	2.045	45.720	45.327	1.856	52.333	48.429	2.775
Extreme Rural	56.985	57.827	2.341	53.906	53.547	2.061	62.906	59.431	2.283
Small Places	60.947	63.523*	1.001	55.809	55.574	1.046	65.760	65.158	1.422
Medium City	60.892	61.467	1.603	55.801	54.726	1.429	66.258	61.538*	2.036
Main Big City	63.679	61.981	1.805	57.428	54.936	1.883	66.010	62.745	2.827
Urban Fringe	64.660	65.293	1.494	56.359	56.626	1.387	67.231	67.384	2.382
Hi Metro	69.805	71.081	1.277	63.274	61.798	1.317	73.110	72.945	1.844

The mean percentage for a set of items is the average percentage of students who responded correctly to the items.

The standard error (SE) of the difference between a 1970-71 mean percentage and a 1974-75 mean percentage was computed by taking the square root of the sum of the squared 1970-71 standard error of the mean and the squared 1974-75 standard error of the mean.

* Indicates that the difference in mean percentages between the two assessments was at least two standard errors in magnitude. The probability that a difference this large would have occurred by chance is .05 or less.

Table IV
Mean Percentages and Standard Errors of Differences
For 17-Year-Old Students on Literal Comprehension,
Inferential Comprehension and Reference Skill
Items for NAEP Reading Assessments
(1970-71, 1974-75)

	Literal Comprehension Mean Percentages		SE	Inferential Comprehension Mean Percentages		SE	Reference Skills Main Percentages		SE
	1970-71	1974-75		1970-71	1974-75		1970-71	1974-75	
Nation	76.789	77.045	.494	64.238	63.210	.594	69.224	69.530	.858
Region									
Southeast	71.953	73.087	1.142	59.405	59.760	1.206	62.196	63.208	2.096
West	76.255	76.161	.995	63.324	62.047	1.140	68.628	68.347	1.879
Central	78.956	79.452	.720	66.356	65.207	.984	72.373	72.897	1.271
Northeast	78.525	78.314	1.042	66.290	64.779	1.378	71.547	71.743	1.676
Sex									
Male	74.834	74.859	.626	61.946	61.537	.635	68.030	68.609	1.015
Female	78.645	79.109	.504	66.425	64.805*	.753	69.581	70.411	.942
Race									
Black	61.626	63.310	1.408	46.956	47.308	1.178	45.365	47.725	1.967
White	78.857	79.632	.421	66.517	65.980	.529	72.310	73.304	.657
Parent Education									
No H.S.	66.954	68.173	1.328	51.704	52.263	1.481	54.352	54.580	2.455
Some H.S.	71.513	70.923	.829	57.858	56.279	.960	59.305	59.478	1.709
Grad H.S.	76.363	76.106	.658	63.028	61.651	.712	69.275	68.071	1.108
Post H.S.	81.765	81.557	.478	70.476	68.592*	.619	76.640	76.428	.740

Community Type									
Lo Metro	69.313	68.896	2.004	55.195	52.989	1.990	59.674	58.133	3.248
Extreme Rural	74.375	75.322	1.596	60.567	62.015	2.614	64.833	66.730	2.975
Small Places	75.836	77.511*	.801	63.994	64.285	1.059	68.109	70.061	1.551
Medium City	78.417	76.813	1.131	63.980	63.601	1.433	69.233	69.248	1.963
Main Big City	76.568	77.317	1.219	64.560	62.361	1.760	70.218	69.760	2.201
Urban Fringe	77.555	79.231	1.132	66.037	64.594	1.227	71.339	73.686	1.659
Hi Metro	83.065	83.120	.941	71.003	70.195	1.329	78.026	78.426	1.051

The mean percentage for a set of items is the average percentage of students who responded correctly to the items.

The standard error (SE) of the difference between a 1970-71 mean percentage and a 1974-75 mean percentage was computed by taking the square root of the sum of the squared 1970-71 standard error of the mean and the squared 1974-75 standard error of the mean.

* Indicates that the difference in mean percentages between the two assessments was at least two standard errors in magnitude. The probability that a difference this large would have occurred by chance is .05 or less.

National Assessment in Reading: Reflections

An important purpose of the NAEP in reading was to provide educational decision makers with information they would find useful in identifying educational problems and establishing educational priorities. In order to get an indication of how well NAEP has fulfilled this purpose, several prominent reading educators were asked for their reflections on NAEP in reading. Specifically, they were asked to reflect on two questions: 1) To what extent are the results of NAEP in reading consistent with trends in reading achievement reported elsewhere? 2) What are some of the implications for educators? Some of the educators' reflections are presented in this section.

To what extent are the results of the National Assessments in Reading consistent with trends in reading achievement reported elsewhere?

WILLIAM BLANTON (Reflections) Politicians, educators and lay people have again and again argued that the reading performance of a particular population is less than the performance level of their counterparts at sometime in the past. This assertion has, in more cases than not, been supported by passion rather than hard data.

The current assessment results indicated that during the period between 1971 and 1975, the reading achievement of 9 year olds increased, particularly for certain groups of 9 year olds. This should not be an unexpected finding, given the results reported by researchers in the past. For example, investigators comparing similar populations in the past consistently found that reading achievement increased (Worcester and Kline, 1947; Burke and Anderson, 1953; Fridian, 1958; and Gates, 1961). Nevertheless, the fact that the results for the current 9 year old group followed the trend found by earlier researchers must not be ignored. In short, one might speculate that the reading achievement of children age 9 continued to increase, as it has done in the past.

In contrast to the increase in achievement of 9 year olds, the current analysis for 13 year olds suggested that the performance level of this group has remained at the same level.

These results are contrary to the trends reported by researchers in the past. Specifically, when the level of achievement for later groups was compared with the level of achievement of earlier groups, the performance of the later groups was always found to be higher (Caldwell and Courtis, 1924; Woods, 1935; Krugman and Wrightstone, 1945; Worcester and Kline, 1947; Finch and Gillenwater, 1949; Burke and Anderson, 1953; Davis and Morgan, 1955; Miller and Lanton, 1956; Partlow, 1955; Fridian, 1958). The results of the analysis of the current assessment, then, should be consistent. They definitely run against the trend.

Moving on to the achievement of 17 year olds, the current analysis revealed that achievement for this group has remained the same or decreased. Very few researchers have reported results for this age group. Flannagan and Jung (1971), for example, reported increases in achievement favoring a 1970 group of eleventh graders when they were compared with a 1960 group. But Flannagan (1976) revealed that the performance of a 1975 group of eleventh graders declined when compared to the performance of a similar 1960 group. In short, there are no clear trends in the available achievement data comparing 17 year olds.

In addition, a report by Farr, Tuinman and Rowls (1974) adds credibility to trends established by earlier research and the current National Assessment results. Farr, Tuinman and Rowls collected reading test data from large city school districts. They received usable data from six districts covering the period 1950-1971. From the data, they concluded the following:

1. Between 1960-65 there was a slight rise in achievement.
2. Achievement during 1970 was slightly lower than 1960 or 1965.
3. Performance at the lower grade levels had not dropped as much as performance at the upper grade levels.

Farr, Tuinman and Rowls also secured reading test data from state departments of education. From this data, they were able to conclude the following:

1. Between 1940 and 1965 there was a steady improvement in reading achievement.
2. After 1965 there was a slight but steady decline in achievement.

To summarize then, there is a dearth of data to which the NAEP results can be compared and the data which are comparable vary in the degree to which they are consistent with the NAEP findings.

What are some of the implications for the educator?

To assess the implications of the National Assessment in Reading, several interested persons representing the following groups

were asked to discuss the implications and benefits they derived from these data: adult educators, bilingual educators, community college educators, elementary educators, parents, school reading directors, publishers, research and development center personnel, researchers, secondary educators, state coordinators, and teacher educators.

ADULT EDUCATORS (Reflections by Jo Ann Dauzat) The NAEP materials may help the adult educator to understand global characteristics of the student population of this age level. Given that the greatest proportion of the population of ABE programs is drawn from elementary school and secondary school dropouts, it would prove beneficial for the adult educator to know what the students could do before they became dropouts. NAEP materials give definite indications of such information. If the reading skills of children have shown significant improvements in a four year period, then the number of children who have poor reading abilities must be declining. This may have a drastic impact on the number of students who are retained in one or more grades in school. If more students experience academic success because of their increased reading ability, this may serve to decrease the dropout rate. With the needs of children being more adequately met in the regular school program, and with more students remaining in school, there will be a decline in the population for ABE programs.

If the projections stimulated by the NAEP report actualize, the need for ABE programs as they currently exist will diminish. However, instead of displacing the adult educator and adult education programs, this may serve to free adult education personnel to develop more creative programs for the continuing education for all United States citizens.

BILINGUAL EDUCATORS (Reflections by James Flood) When the teacher of bilingual students and students who are learning English as a second language is presented with the NAEP materials, it will not be clear whether bilingual or English as a Second Language (ESL) students actually participated in the most recent testing program. The results do not specifically report the performance of bilingual or ESL students, nor do the results provide covariate information about the bilingual student, e.g., degree of exposure to English or the language(s) of communication in the student's home. Therefore, the results of this round of testing certainly cannot speak to the issues of the overall effectiveness of bilingual education, nor can any conclusions be drawn about the language/reading progress of bilingual or ESL students *per se*.

In the future, the designers of this test must be extremely cautious when they are testing bilingual and ESL students. They must take certain linguistic and cultural factors into considera-

tion before testing bilingual and ESL students; they must be able to answer several questions:

1. Are the vocabulary items appropriate for a student learning English as a second language?

2. Are the syntactic formations appropriate for a student learning English as a second language?

3. Do test items require extensive knowledge of idiomatic expression?

4. Do test items require extensive knowledge of one specific culture?

COMMUNITY COLLEGE EDUCATORS (Reflections by Jane McGrath) The open door policy, low tuition rate, and geographic accessibility combine to make the community college the fastest growing educational institution in America. Students drawn to the community college by these factors fit no single mold or stereotype. Therefore, community college instructors are constantly alert for information to aid them in preparing to adequately meet the needs of these diverse college students.

First, instruction needs to continue in the very basic area of literal comprehension. The NAEP results indicate that very small achievement increases were found in this foundations area for the seventeen year olds. It is anticipated, therefore, that the development of literal comprehension skills need to receive continued emphasis at the community college level.

Secondly, the area of inferential comprehension appears to need increased emphasis for all students at this level. Emphasis must come from all content areas and must come in varied ways. Community college instructors must begin to teach their students how to "think with their books"—not merely memorize—for thinking demands activity, not just a passive absorption of the printed word as too often occurs in literal recall memorization.

The third area for concern in the plan for action at the community college suggested by the NAEP involves the teaching of reference and locational skills. Since the seventeen year olds maintained a stable achievement level according to the NAEP, a primary consideration may be the broad range of study skills that need to be offered within the NAEP guidelines that they be relevant.

ELEMENTARY EDUCATORS (Reflections by Dixie Lee Spiegel) The NAEP report can be of value to the elementary school teacher not only as a "pat on the back" for continuing to do a good job in teaching basic reading skills but can also serve to identify various sections of the population from which children can and cannot be expected to read.

Elementary school teachers can be pleased with the gains reported for nine year olds by NAEP. Apparently, these

teachers are teaching reading more effectively than they were at the time of the first assessment. But the NAEP report gives little indication of what could be causing these improved scores. A summary of new educational procedures, programs, and materials available during 1971-75 is needed to make the report of greater utility. In addition, entry skills possessed by first graders need to be examined to determine if early intervention programs, increased preschool attendance, and educational television are having an impact on the reading achievement of primary school children. Teachers need to know not only that they are more successful in teaching reading, they need to have indications of why they have had increased success so that effective programs can be supported more widely. Perhaps some of the insights gained through an investigation of primary school reading programs can be applied to improve reading instruction in the upper grades, where progress has been lacking.

The 1979 NAEP results for thirteen year olds will be of great interest to elementary school teachers. The 1975 assessment showed that nine year olds were having greater success in reading than in 1971. It will be interesting to learn if these gains are carried on through the junior and senior high school years.

PARENTS (Reflections by Carol Sager) Scholastic Aptitude Test scores are falling, kids can't write, and now we're told that Johnny *can* read . . . he's even getting better at it! What's a parent to believe?

Although the NAEP results may appear to be contradictory, they suggest that Johnny can read, but only the simplest of statements. He can perform such tasks as reading a telephone book, following directions on a can of cat food, or recalling the facts.

As a matter of fact, on literal comprehension items such as these, today's youngsters are reading better than the children who were tested four years ago. While these skills are important, they represent only a minimal level of functional literacy. Effective readers must be able to read for many purposes other than finding or using factual information. These purposes require the ability to read between the lines, predict outcomes, and make judgments. With this information in mind, parents may wonder what they can do to aid in developing more effective readers. While the NAEP data do not provide specific answers, they direct inquiry.

SCHOOL READING DIRECTORS (Reflections by Carita Chapman) The overworked school director may well inquire, "What can National Assessment do for my school?" or "How can I use the National Reading Assessment data?" Given that a set of data cannot improve nor reveal everything about the quality of

instruction, it seems important to explore ways in which these data may be used in order to contribute to the general reading improvement of a school.

The assessment data can be useful in providing bases upon which to make decisions affecting many aspects of the school's educational program. These bases include National Assessment objectives, materials, methodology, and results. NAEP objectives can serve as a yardstick against which the local administrator can review his school's reading objectives.

The assessment materials and methodology can also be used by the administrator to establish and maintain an education assessment program for his school. At least the school administrator can investigate the possibilities for using the materials and methods of the NAEP assessment which are available through the state educational agency. Specimen sets of the National Assessment exercises released to the public and instructions for their administration are available.

The NAEP results can point the way to needs evidenced by local districts. If so desired, local student achievements can be compared with the achievements of other students in the same region or across the nation. If this is done, it should be accompanied by information on the general meaning of norms, medians, etc., to discourage those teachers who may wish to decrease their efforts if their students appeared to be performing above the national level.

PUBLISHERS (Reflections by Roger Farr) What can publishers do with the NAEP results which we now have? I think there are specific steps that should be taken by publishers and by professional educators.

Publishers could profit from the following:

1. *Reviewing the NAEP reading objectives to determine a match between these objectives and the objectives of their instructional materials in reading.* The objectives present a carefully developed, comprehensive set of goals which have been deemed important by various professional and lay groups.

2. *Examining the individual test items to determine if published or instructional materials being developed include emphasis on the practical application of reading exemplified by these items.* The items present a practical definition of reading. I believe that those who are involved with the development of instructional materials in reading will find many useful ideas about the kinds of things that are important outcomes of reading instruction. Too often instructional programs and instructional materials teach specific isolated reading skills and tend to slight the application of reading skills. The National Assessment items could be criticized for the lack of information they provide about specific reading skills, but they

can be praised for emphasizing the broader goals of reading instruction in terms of practical, realistic reading tasks.

3. *Examining the results of students' performance on various items to develop an understanding of expected levels of student performance or various types of reading tasks.* The NAEP results provide a valuable guide to estimating how well students perform on certain reading tasks.

RESEARCH AND DEVELOPMENT CENTER PERSONNEL (Reflections by Wayne Otto) Interpretations of the NAEP reading assessment will come from many quarters and from many points of view. Some draw direct inferences for instruction and/or program development, others suggest needs for additional analyses of existing data, and still others point directions for studies yet to be done. Taken together they show that the assessment data offer direction and promise for improving both reading instruction and reading achievement. But the fact is that many of the directions need to be explored more fully before the promise can be fulfilled. That exploration can, in my opinion, be advanced best through coordinated research *and development* activities. There exist components of an enterprise that could have a significant effect on reading achievement throughout the nation in the reasonably near future. The NAEP reading assessment is producing results and there is a national network of laboratories and centers with both expertise and experience in research and development. With direction, dedication and support those components could be brought together to assure that the best efforts of each would contribute to progress toward a common goal. An example will illustrate what I mean.

Data from the two assessments show that the performance of 9 year olds, particularly black 9 year olds, improved, whereas there was no corresponding improvement among 13 and 17 year olds. One very attractive interpretation of that particular finding would be that the massive intervention programs that have been made available, particularly at the primary levels, are having an impact on reading performance. But before we jump to that conclusion we shall need to acknowledge some equally plausible alternate interpretations, e.g., family size has decreased, more qualified teachers are available, nutritional standards have improved and so on. Through further analysis of the assessment data, we could determine whether there is support for the intervention hypothesis. If the hypothesis is supported, we would begin to identify local programs that produce gains in reading performance. Then, through careful analysis of successful programs we could derive specifications for developing similar programs for implementation in other localities. The development cycle would be followed by further assessment to

determine whether and/or where the programs produce results. Finally—given positive results with at least some of the programs—programs could be refined through additional development and research. Ultimately, we would look for impact in future NAEP reading assessments.

RESEARCHERS (Reflections by Robert Ruddell) Individuals in reading research will be interested to know that the NAEP reading assessment data tapes are available, at cost, from National Assessment headquarters in Denver, Colorado. The data for the 1970-71 and 1974-75 reading evaluations include literal comprehension, inferential comprehension, and reference skills achievement scores. The five independent status variables are region of the country, sex, race, level of parental education, and community type. Various questions of interest may be asked of these data; however, basic limitations are found in attempting to establish causative relationships between achievement level and possible treatment effects due to the anonymous nature and limited scope of data collection.

Researchers will be interested in careful examination of the test instruments, assuming these tests are made available. The question of reliability of the tests on literal comprehension, inferential comprehension, and reference skills should be pursued. The validity of the items also deserves careful consideration from the standpoint of any theoretical framework which might have been used as the basis for generating test items. To what extent do the test items reflect the logical and detailed conceptualization of the comprehension process? To what extent do the reading items reflect the reading skills which influence one's ability to function in society?

A basic question to be asked of the data relates to the equivalence of the 1970-71 and 1974-75 subjects. Specifically, did the data analysis account for a blocked design which provided for equivalent comparisons of achievement variations? For example, did the data analysis account for parental education when comparing achievement levels over the four-year period for male and female students? Black and white students? Thus, how comparable are subjects from the 1970-71 and the 1974-75 data collection?

As is noted in the next chapter, causative interpretation of NAEP reading data is highly speculative in nature. Assuming that the instruments are indeed reliable and valid and that the comparison groups are equivalent, the data serve as benchmarks to progress in reading achievement at various stages of reading development over a given time period. Within the limitations of the data, however, it would be of interest to pose questions exploring specific expected relationships.

SECONDARY EDUCATORS (Reflections by James P. Mahaffey) The NAEP data provide secondary educators with important information on the reading skills development and needs of students at strategic age levels. Conclusions drawn from these data suggest numerous practices that should be beneficial to and considered by secondary educators in an effort to produce more efficient and effective readers in the secondary school years. What are some of the practices that might be considered beneficial enough to include in secondary school programs today in an effort to enhance the reading skills achievement of 13 and 17 year olds? Secondary schools should continue to build upon those basic skills previously taught in the elementary grades. The ability to handle simple literal comprehension items needs to be refined and extended through content area subject matter instruction so that secondary pupils can begin to develop and apply higher level comprehension and study skills in all subject matter areas.

The NAEP data further suggest that an intensive effort needs to be given to the development of inferential comprehension skills in the secondary grades using materials in which ideas are stated implicitly and explicitly. Likewise, more effort must be focused in the early secondary school years on the development of specific study skills essential to the mastery of the content of the students' selected program of study.

STATE COORDINATORS (Reflections by Marie DiBiasio) The results of the National Assessment may: 1) be useful as a means of eliciting a positive attitude about many existing reading programs for nine year olds, thus building the base of confidence necessary to confront the difficult issues and problem areas which the data reveal, and 2) raise the questions and issues which frequently serve to motivate specialists to pose specific, critical questions of their own practices.

The state coordinator could focus on the relative success of certain age groups in specific reading/literacy skills and the implications of the data in these areas for other age groups. For example, under the leadership of the state coordinator, a comprehensive analysis could be undertaken to determine exactly what factors in curriculum, school organization, personnel utilization, instructional resources and administrative procedures distinguish instruction on those grade levels in which student achievement is high from those grade levels in which achievement is depressed.

TEACHER EDUCATORS (Reflections by Roselimina Indrisano) For the teacher educator whose primary focus of concern is reading, the National Assessment of Educational Progress data are abundant in potential. Although the absence of data on teacher behavior is acknowledged, it is important to explore

ways the teacher educator might interpret the findings as they relate to their roles as: Research, Teaching, and Service.

1. *Research*. The success of the youngest sample suggests that the preschool experiences of children may be having a positive effect. It is possible that preschool education at home via parent activity and educational television and at school through extended nursery and kindergarten program has affected readiness abilities? It would be well to investigate the degree to which these early experiences have changed the first grade population.

The majority of subjects of all ages appear to be able to estimate their own reading ability. If youngsters do perceive accurately, what would be the effect of their participation in analyzing their specific strengths and needs, setting goals and monitoring progress toward stated objectives? Further, how do perceived levels of success and active participation in the evaluative process affect literacy and, perhaps more importantly, nonliteracy?

Since it has been shown that females are more successful than males, the recommended investigations should include substudies to add insight to the possible reasons for differences in achievement.

2. *Teaching*. Among the unsolved problems in education are questions related to the effect of teacher characteristics, competence, and style on the quality of instruction and subsequent learning. While it is acknowledged that these questions are outside the purview of the present charges of NAEP, it would be well to search the data for possible relationships between teacher and learner, teaching and learning. There are few more vital questions for us to ask.

3. *Service*. Insignificant changes within the older groups in general achievement and of the majority of the groups on tasks which require application and transfer of reading skills may indicate less awareness, less emphasis, and less competence in teaching these processes. If this assumption is accepted, it would seem desirable for teacher educators to examine the emphases of their teacher preparation programs at elementary and secondary levels.

Finally, at a time when teachers of reading . . . and their teachers are subject to increasing questioning and criticism, one invitation is irresistable. The reader is respectfully requested to complete the following syllogism:

Teacher educators teach teachers to teach youngsters.

Youngsters seem to be learning. . . .

Summary Discussion

The foregoing reflections indicate that prominent reading educators regard NAEP in reading an exploratory effort. Although

some of these educators already have seen value in the results, especially as they reflect trends in reading achievement, most agree that sound, usable information has yet to come from NAEP in reading. Their remarks point to several concerns NAEP will have to address if it is to accomplish its goals. NAEP will have to establish the validity and reliability of its tests. It will have to take into account assessment of progress among persons with special learning needs. And it will have to provide a basis for the interpretation of results as they relate to school experiences.

National Assessment of Educational Progress in Reading: A Final Word

This publication was developed to provide factual information and interpretative commentary on the National Assessment of Education Progress in Reading. Specifically, it was developed to 1) summarize the context and results of the 1970-71 and 1974-75 national assessments in reading and 2) extract implications from these assessments for various persons at all levels of reading instruction.

Within this framework, the present chapter provides a cautionary backdrop for the findings and implications presented in the previous chapters.

The present chapter includes 1) an examination of the strengths and weaknesses of the 1970-71 and 1974-75 NAEP in Reading and 2) suggestions for needed improvements for purposes of subsequent assessment.

Strengths and weaknesses of the 1970-71 and 1974-75 NAEP in Reading

In Chapter One, Facts about the National Assessment of Educational Progress, it was suggested that the primary purpose of NAEP was to provide information so that education decision makers could identify problem areas, establish priorities and determine national progress in education. Furthermore, it was suggested that the 1970-71 and 1974-75 assessments were directed toward 1) making available on a continuing basis comprehensive information on the education achievement of young Americans, 2) measuring change in the education achievement of young Americans, and 3) continuing to develop the technologies necessary for gathering and analyzing National Assessment information. If the NAEP procedures and data are examined in terms of these purposes, then the following strengths and weaknesses become apparent.

Strengths

1. The NAEP has made available information on the reading achievement of young Americans across two assessments. In various

reports, the results of the 1970-71 and 1974-75 national assessments in reading have been reported.

2. The exercises used in the two assessments reflect an attempt to develop alternative technologies for gathering and interpreting national assessment information. As Venezky (1977:755) suggested:

> By establishing thorough procedures for selecting and validating objective test items that cover a wider range of abilities than typical standardized achievement tests, the National Assessment has provided for the first time an alternative to norm referenced tests.

3. The exercises used in the two assessments include a variety of reading material representative of what readers encounter both in and out of school and a variety of item formats and response demands toward matching the different demands imposed upon the reader by different texts. Furthermore, selected exercises are released for public scrutiny.

Weaknesses

1. It can be argued that regardless of the test used, an accurate measure of reader competence cannot be described by a score on a single test, especially a score reflecting the sum of correct responses or a score based on inappropriate criteria. The NAEP reading exercises exhibit these deficiencies. Specifically, an examination of the released NAEP items by Tierney and Goodman (1978) indicated that the exercises used in the NAEP in reading were not measuring what NAEP claimed they measured. Tierney and Goodman suggested:

> The examples released of "literal" items included one which required the reader to accept a literal response to a question dealing with a satirical passage. If the reader *inferred* the humor then all five choices offered were plausible. If the reader failed to see the humor then only the literal response worked. Since nine year olds are not noted for their ability to deal with subtle humor it's not surprising that about 2/3 got it right. Too bad for those nine year olds with a sense of humor; they're lost in the 1/3 who chose wrong answers.
>
> But then we're offered an "inferential" item that began "We all know the mentally retarded can only make baskets and other simple objects like..."—too bad again for the 1/3 of 13 year olds who took them literally and chose to complete "the purpose of this advertisement is to..."—with "show the general public that mentally retarded people can make simple things." What seemed to be demonstrated was that 13 year olds were more likely to reject literal answers in favor of more subtle implications while 9 year olds were not.
>
> Then we shouldn't be surprised that in answering the question involving a short tall tale about killing flies, "What does the author want you to do when you read this story?" almost 2/3 of 9 year olds rejected the "right" answer: "He wants you to think it is funny."
>
> From these items, each with only one "right" answer, it appeared that some things were to be literally comprehended and some were to involve inference and that competent readers should have easily recognized the difference.

Even if all NAEP exercises accurately measured what they purported to be measuring, the exercises appear to have inadequately represented a *comprehensive* examination of reading. Instead, NAEP admitted to a post hoc classification of their exercises and noted that only approximately 50 percent of their 1970-71 assessment exercises were used in 1974-75.

2. The sampling procedures used by NAEP to make generalizations may have been appropriate for drawing conclusions for the entire U.S. and selected subgroups, but these procedures did not afford an examination of other subgroups, for example, divergent cultural groups.

Discussion

It seems that the important thing that NAEP has shown is that little of real utility has been provided by the two past assessments in reading. Certainly the comparative results from the two assessments must be viewed with great caution. In terms of purposes, NAEP's goals have yet to be reached.

It might be concluded that while NAEP has attempted to provide objective data on the educational attainment of young Americans and improvements in testing technology, NAEP's worth has yet to be realized. As Lapp and Tierney (1977:760) suggested:

> The history of education is punctuated with subjective claims of the national decline of reading standards. The NAEP data represent an important step toward securing objective data by which claims of trends can be examined. As such, the present assessment represents an important step toward legitimate educational decision making. Hopefully, with the establishment of more adequate assessment procedures this process will become accepted as valid, viable and vital.

To this end, NAEP has begun initiating plans for the next NAEP in reading. They have solicited the advice of selected qualified educators, including representatives from selected national organizations. As a result of this advice, they have addressed again the issue of the purposes of the assessment, established clearly defined test development procedures and initiated validity checks at various points. Information about the objectives and procedures initiated for the next NAEP in reading is available from the Education Commission of the States, Denver, Colorado.

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